

GENERIC · POWERTRAIN

P0009

OBD-II TROUBLE CODE

P0009

Engine Position System Performance (Bank 2)

P0009 means the powertrain control module (PCM) has detected a performance problem with the engine position system on bank 2, which is the camshaft and crankshaft signal correlation for that cylinder bank. The computer compares the expected camshaft position against the crankshaft position and flags the code when the two signals do not stay in the correct mechanical relationship.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Professional	Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or misfire that feels like a shaking engine
- Extended cranking before the engine starts or an intermittent no-start
- Reduced engine power or limp mode under acceleration
- Poor fuel economy or increased emissions
- Occasional stalling when coming to a stop

Common causes, most likely first

- 1 Worn or stretched timing chain or timing belt on bank 2
- 2 Faulty bank 2 camshaft position sensor or its wiring connector
- 3 Failed crankshaft position sensor or damaged reluctor wheel
- 4 Oil sludge or debris obstructing the camshaft phaser or sensor signal
- 5 Jumped timing tooth due to a failed tensioner or guide
- 6 Electrical fault in the camshaft or crankshaft sensor circuit, such as a short or open wire



How to diagnose and fix it

- 1 Connect a scan tool and record freeze-frame data plus any related codes before clearing anything
- 2 Inspect the bank 2 camshaft and crankshaft sensor connectors and wiring for damage or corrosion
- 3 Check engine oil level and condition, then verify oil pressure if sludge is suspected
- 4 Use a lab scope to compare camshaft and crankshaft signals for correct timing and amplitude
- 5 Perform a mechanical timing verification by aligning the timing marks or checking chain stretch
- 6 Replace the faulty sensor or repair the circuit, then clear codes and road-test
- 7 If timing components are worn, replace the timing chain, belt, tensioner and guides as a set

What a P0009 often really means

- A stretched timing chain on bank 2 is a far more common cause than a failed camshaft sensor, so replace sensors only after mechanical timing is verified.
- The code can set intermittently from oil sludge blocking a camshaft phaser, especially on engines with long oil change intervals.
- A weak battery or poor ground can corrupt the cam and crank signals enough to set P0009 without any hard part failure.
- Do not assume bank 2 is the passenger side; bank numbering follows the cylinder that contains cylinder number one, which varies by engine layout.
- After a timing component repair, the camshaft correlation learn procedure must be completed or the code will return immediately.

Can I keep driving with P0009?

You can usually drive short distances to a repair shop, but avoid hard acceleration and sustained high speeds because a jumped timing chain can cause valve damage. If the engine runs rough, stalls, or loses power, stop driving and have it towed.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter for circuit and sensor testing
- Lab scope for camshaft and crankshaft signal comparison
- Timing light or mechanical timing mark tools
- Oil pressure gauge
- Basic hand tools and socket set



Reading P0009

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 0** Fuel and air metering and auxiliary emission controls.
- 09** The exact fault within that area.

Often seen with

P0008 Engine Position System Performance (Bank 1) · **P0010** 'A' Camshaft Position Actuator Circuit (Bank 1) · **P0011** 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0016** Crankshaft/Camshaft Position Correlation (Bank 1 Sensor A) · **P0340** Camshaft Position Sensor A Circuit Malfunction (Bank 1)

See it working

Watch the animated explainer [Helicopter Simulator: Take Off, Hover and Land](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0009/>

